



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/455,851	12/07/1999	DAVID ALLEN SLUZEWSKI	SEA8994/M&G3	5638

23552 7590 09/11/2003

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

RENNER, CRAIG A

ART UNIT	PAPER NUMBER
----------	--------------

2652

DATE MAILED: 09/11/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/455,851

Applicant(s)

SLUZEWSKI ET AL.

Examiner

Craig A. Renner

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4,8-11,15-18 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4,8-11,15-18 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 18 September 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election without traverse of "Group I" and cancellation of non-elected "claims 24-27 without prejudice or disclaimer" in Paper No. 16, filed 18 June 2003, is acknowledged.

Drawings

2. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed 18 September 2001, have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

3. The drawings are objected to because of the following informality:

In FIG. 6, each of the five left-most reference signs "144" should be changed to --144'-- in order to be consistent with the remainder of the disclosure. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following is

suggested:

--SLIDER SCALE PACKAGE ASSEMBLY WITH INTERCONNECT PADS
PROVIDED BY FLEX CIRCUIT ATTACHMENT TO SLIDER BACK--.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In lines 2- 3 of claim 10, "the bond pads of a head interconnect circuit" are indefinite because they lack clear and/or proper antecedent basis.

b. Claim 11 inherits the indefiniteness associated with base claim 10 and stands rejected as well.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 2652

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4, 8-11, 15-18 and 28-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Zarouri et al. (US 5,771,138).

With respect to claims 1-4 and 8-11, Zarouri teaches a slider scale package assembly (FIGS. 1E and 1F, for instance) comprising a slider/MR head (2); and a flex circuit (8) attached to a back of the slider/MR head (as shown in FIG. 1E, for instance) which turns the slider/MR head into the slider scale package assembly with at least one interconnect pad (9) disposed at the back of the slider/MR head (as shown in FIG. 1F, for instance) [as per claim 2]; wherein the flex circuit further includes a conductive material (lines 5-7 in column 5, for instance), the at least one interconnect pad is electrically connected to the conductive material of the flex circuit (lines 5-7 in column 5, for instance), the slider/MR head includes at least one bond pad (7), the conductive material of the flex circuit is electrically bonded to the at least one bond pad of the slider/MR head (as shown in FIG. 1E, for instance) [as per claim 3]; wherein the electrical bonding between the conductive material of the flex circuit and the at least one bond pad of the slider/MR head is disposed at a front end of the slider/MR head (as shown in FIG. 1E, for instance) [as per claim 4]; wherein the flex circuit includes first, second, third, and fourth interconnect pads (each 9, as shown in FIG. 1E, for instance) wherein the at least one interconnect pad is one of the first, second, third or fourth interconnect pads, and the slider/MR head includes first, second, third, and fourth bond pads (each 7, as shown in FIG. 1E, for instance) wherein the at least one bond pad is

one of the first, second, third or fourth bond pads [as per claim 8]; wherein the first and second bond pads are electrically coupled to a first pair of positive and negative polarities of the slider/MR head, respectively, the third and fourth bond pads are electrically coupled to a second pair of positive and negative polarities of the slider/MR head, respectively (as four channels are shown in FIG. 1E, for instance, there must be two opposite polarity pairs to complete the channel circuits) [as per claim 9]; wherein the first, second, third, and fourth interconnect pads are arranged such that the polarities of the bond pads of a head interconnect circuit match with polarities from the head interconnect circuit (as shown in FIG. 1F, for instance) [as per claim 10]; and wherein the first and second interconnect pads are electrically connected to the first and second bond pads of the slider/MR head, respectively, and the third and fourth interconnect pads are electrically connected to the third and fourth bond pads of the slider/MR head, respectively (as shown in FIG. 1E, for instance) [as per claim 11].

With respect to claims 15-18, Zarouri teaches a head gimbal assembly (FIGS. 1E and 1F, for instance) comprising a suspension (4) supporting a slider/magnetic recording head (2); a head interconnect circuit (1) being attached to and disposed along the suspension and including a conductive material; and a slider scale package comprising a flex circuit (8) attached to a back of the slider/magnetic recording head (as shown in FIG. 1E, for instance) which turns the slider/magnetic recording head into the slider scale package with at least one interconnect pad (9) disposed at the back of the slider/magnetic recording head, the at least one interconnect pad being electrically bonded to the conductive material of the head interconnect circuit (as shown in FIG. 1F,

Art Unit: 2652

for instance) [as per claim 15]; wherein the flex circuit includes a conductive material, and the slider/magnetic recording head includes at least one bond pad (7), the conductive material of the flex circuit is electrically connected to the at least one interconnect pad at a first end (as shown in FIG. 1F, for instance) and to the at least one bond pad of the slider/magnetic recording head at a second end (as shown in FIG. 1E, for instance) [as per claim 16]; wherein the flex circuit includes first, second, third, and fourth interconnect pads (each 9, as shown in FIG. 1E, for instance) wherein the at least one interconnect pad is one of the first, second, third or fourth interconnect pad, and the slider/magnetic recording head includes first, second, third, and fourth bond pads (each 7, as shown in FIG. 1E, for instance) wherein the at least one bond pad is one of the first, second, third or fourth bond pads [as per claim 17]; and wherein the first, second, third, and fourth interconnect pads are arranged such that the polarities of the bond pads match with polarities from the interconnect pads (as shown in FIGS. 1E and 1F, for instance) [as per claim 18].

With respect to claims 28-33, Zarouri teaches a head gimbal assembly (FIGS. 1E and 1F, for instance) comprising suspension means (includes 4, for instance, in at least an equivalent structural sense) for supporting a slider/magnetic recording head (2); a head interconnect circuit (1) secured to the suspension means and including a conductive material; and a slider scale package including the slider/magnetic recording head and a flex circuit (8) electrically connected to the slider/magnetic recording head (as shown in FIG. 1E, for instance), secured to the back of the slider/magnetic recording head (as shown in FIG. 1E, for instance), and arranged and configured with a plurality

Art Unit: 2652

of interconnect pads (each 9, as shown in FIG. 1F, for instance) disposed at the back of the slider/magnetic recording head (as shown in FIG. 1F, for instance), wherein the plurality of interconnect pads are electrically connected to the conductive material of the head interconnect circuit (as shown in FIG. 1F, for instance) [as per claim 28]; wherein the flex circuit includes a first end, a second end, and a conductive material extending from the first end to the second end (as shown in FIGS. 1E and 1F, for instance) [as per claim 29]; wherein the plurality of interconnect pads are located at the first end of the flex circuit, the slider/magnetic recording head includes a plurality of bond pads (each 7, as shown in FIG. 1E, for instance), and the conductive material of the flex circuit is electrically connected to the interconnect pads at the first end and to the plurality of bond pads of the slider/magnetic recording head at the second end (as shown in FIGS. 1E and 1F, for instance) [as per claim 30]; wherein the flex circuit includes first, second, third, and fourth interconnect pads (each 9, as shown in FIG. 1F, for instance) [as per claim 31]; wherein the slider/magnetic recording head includes first, second, third, and fourth bond pads (each 7, as shown in FIG. 1E, for instance) [as per claim 32]; and wherein the flex circuit includes first, second, third, and fourth interconnect pads (each 9, as shown in FIG. 1E, for instance) and the slider/magnetic recording head includes first, second, third, and fourth bond pads (each 7, as shown in FIG. 1E, for instance), and wherein the first, second, third and fourth interconnect pads of the flex circuit are electrically connected to the first, second, third and fourth bond pads of the slider/magnetic recording head respectively by the conductive material of the flex circuit (as shown in FIG. 1E, for instance) [as per claim 33].

Response to Arguments

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Pertinent Prior Art


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Arakawa et al. (US 5,396,390), Kubo (JP 62-014310), Morimoto (JP 01-312720) and Watanabe (JP 04-092210), which each individually teaches a slider with a flex circuit attached to a back thereof.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (703) 308-0559. The examiner can normally be reached on Tuesday-Friday 7:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Craig A. Renner
Primary Examiner
Art Unit 2652

CAR